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EXAMINER	
MOORE, IAN N	

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2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/676,139	STEPHENS ET AL.	
	Examiner	Art Unit	
	Ian N. Moore	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) *4,5,13,14,24,25,28,29,32,33,38,39,43,44,48 and 49* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,6-12,15,17-23,26,27,30,31,34,36,37,40-42,45-47 and 50* is/are rejected.

7)☒ Claim(s) *16,35 and 51* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4-25-05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. **Claims 4,5,13,14,24,25,28,29,32,33,38,39,43,44,48, and 49** are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to the nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 5-17-07.

2. Applicant's election with traverse of embodiment 3 in the reply filed on 5-17-07 is acknowledged. The traversal is on the ground(s) that there are generic claims. In particular, applicant's argue that every independent claim (1, 11, 21, 30, 40 and 46) requires that there cannot be an interframe space (IFS). This is found persuasive since all independent claims (1, 11, 21, 30, 40 and 46) require that there cannot be IFS. However, the applicant recites no other argument of traversal (other than arguing requirement of no IFS set forth above). Thus, it is clear that the applicant agrees with the restriction, and the restriction is proper.

The requirement is still deemed proper and is therefore made FINAL.

Claim Objections

3. Claim 21-23,26, and 27 are objected to because of the following informalities:

Claim 21 recites the clause the optional language "**operable to**" in lines 2 and 4. In order to present the claim in a better form and to describe a positive or require steps/function to be performing (i.e. using the claim language that does not suggest or make optionally but required steps to be performed), applicant is suggested to revise the claim language such that the steps/functions, which follows "operable to", to be performed are required (not optional).

Claims 22 and 35 are also objected for the same reason as set forth above in claim 21.

Claims 23,26 and 27 are also objected since they are depended upon objected claim 21 as set forth above.

Appropriate corrections are required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 9 and 10 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites, "**the** first modulation rate" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites, "**the** second modulation rate" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re*

Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. **Claims 1-3,6-8,11, 17,18,21,22 and 27** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12 and 30 of copending U.S. Patent application No. 10/677,055 (hereinafter refers to as Stephens'055) in view of Ho (US 20030169769A1).

Regarding claim 1, although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 of the instant application is the same scope of the claim 12 of Stephens'055 by adding the well-known elements and functions as set forth below.

Claim 1 of Instant application	**Claim 12 of Stephens'055**
Limitation 1 : A method comprising: transmitting a first protocol data unit over an air interface, wherein the first protocol data unit includes	**Limitation 1 :** A method comprising transmitting a preamble over an air interface (*not that a preamble is inside the protocol data unit*)
Limitation 2 : a first preamble to enable a receiver to synchronize	**Limitation 2 :** the preamble enables a receiver to synchronize
Limitation 3 : a first header following the preamble	**Limitation 3 :** transmitting a header over the air interface at the first modulation rate; said transmitting a preamble, said transmitting a header, and said transmitting a consolidated payload all occur within a single frame (*note that header always follows the preamble*)
Limitation 4 : a first service data unit, following the header	**Limitation 4 :** transmitting a consolidate payload over the air interface; wherein the

Claim 1 of Instant application	Claim 12 of Stephens'055
	consolidate payload includes multiple data units; said transmitting a preamble, said transmitting a header, and said transmitting a consolidated payload all occur within a single frame (*note that data unit always follows the header*)
Limitation 5 : transmitting a second protocol data unit over the air interface without an interface space between the first protocol data unit and the second protocol unit	**Limitation 5 : NONE**

In view of the above, it is clear that the claim 1 of the instant application and the claim 12 of Stephens'055 merely recited the same invention except for transmitting a second protocol data unit over the air interface without an interface space between the first protocol data unit and the second protocol unit (limitation 5) as recited in claim 1 of the instant application.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ho. In particular, Ho discloses transmitting (see FIG. 1,3,6, first wireless station 10/110 transmitting; see page 1, paragraph 7-10; see page 3, paragraph 36) a second protocol data unit (see FIG. 6, second MSDU frame; see page 3, paragraph 38-41) over the air interface (see FIG. 1,3,6, over a wireless medium 112; see page 1, paragraph 7-10; see page 3, paragraph 36) without an interframe space between the first protocol data unit and the second protocol data unit (see FIG. 6, multiple (e.g. first and second) MSDUs are aggregated within a single aggregation frame without IFS 35 (see FIG. 2,4); see page 1, paragraph 9-10; page 3, paragraph 38-42).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide transmitting a second protocol data unit over the air interface

without an interface space between the first protocol data unit and the second protocol unit, as taught by Ho in the system of Stephens'055, so that it would provide so that it would improve efficiency of wireless channel utilization; see Ho page 2, paragraph 14.

Regarding claim 2, Ho further discloses said transmitting the second protocol data unit beings in approximately at a next symbol boundary (see FIG. 6, transmitting second MSDU (e.g. a combined system of second frame preamble n, header n and subbody n) is at next/subsequent MSDU boundary/interval/slot) after an end of transmitting the first protocol data unit (see FIG. 6, after the first MSDU (e.g. combined system of second frame preamble 1, header 1 and subbody 1)); see page 1, paragraph 9-10; page 3, paragraph 38-42).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to said transmitting the second protocol data unit beings in approximately at a next symbol boundary after an end of transmitting the first protocol data unit, as taught by Ho in the system of Stephens'055, for the same motivation set forth above in claim 1.

Regarding claim 3, Ho further discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second preamble (see FIG. 2,4, preamble 24 of second MSDU, note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53),

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that

FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the second protocol data unit includes; a second preamble; a second header, following the second preamble; and a second service data unit following the second header following the first header, as taught by Ho in the system of Stephens'055, for the same motivation set forth above in claim 1.

Regarding claim 6, Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26;

note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the second protocol data unit includes; a second header, following the second preamble and a second service data unit, following the second header following the first header, as taught by Ho in the system of Stephens'055, for the same motivation set forth above in claim 1.

Regarding Claim 7, Ho discloses the interframe space is a time period (see FIG. 2-4, IFS 35 a time period/interval between two frames; see page 1, paragraph 8-11) selected from a group of time periods consisting of including a short interframe space (see page 5, paragraph 53; short interface space, SIF). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the interframe space is a time period selected from a group of time periods consisting of including a short interframe space, as taught by Ho in the system of Stephens'055, for the same motivation set forth above in claim 1.

Regarding Claim 8, Ho discloses the header includes a physical device header (see FIG. 2-4, a header 26 is the header of the PHY device; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the header includes a physical device header, as taught by Ho in the system of Stephens'055, for the same motivation set forth above in claim 1.

Regarding claim 11, although the conflicting claims are not identical, they are not patentably distinct from each other because claim 11 of the instant application is the same scope of the claim 12 of Stephens'055 by adding the well-known elements and functions as set forth below.

Claim 11 of Instant application	Claim 12 of Stephens'055
Limitation 1 : A method comprising: receiving a first protocol data unit over an air interface, wherein the first protocol data unit includes	**Limitation 1 :** A method comprising transmitting a preamble over an air interface (*not that a preamble is inside the protocol data unit, if there is transmitting, there must be receiving)*
Limitation 2 : a first preamble to enable a receiver to synchronize	**Limitation 2 :** the preamble enables a receiver to synchronize
Limitation 3 : a first header following the preamble	**Limitation 3 :** transmitting a header over the air interface at the first modulation rate; said transmitting a preamble, said transmitting a header, and said transmitting a consolidated payload all occur within a single frame (*note that header always follows the preamble*)
Limitation 4 : a first service data unit, following the header	**Limitation 4 :** transmitting a consolidate payload over the air interface; wherein the consolidate payload includes multiple data units; said transmitting a preamble, said transmitting a header, and said transmitting a consolidated payload all occur within a single frame (*note that data unit always follows the header*)
Limitation 5 : receiving a second protocol data unit over the air interface before expiration of an interface space	**Limitation 5 : NONE**

In view of the above, it is clear that the claim 11 of the instant application and the claim 12 of Stephens'055 merely recited the same invention except for receiving a second protocol data unit over the air interface before expiration of an interface space (limitation 5) as recited in claim 11 of the instant application.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ho. In particular, Ho discloses receiving (see FIG. 1,3,6, first wireless station 10/110 receiving; see page 1, paragraph 7-10; see page 3, paragraph 36) a second protocol data unit (see FIG. 6, second MSDU frame; see page 3, paragraph 38-41) over the air interface (see FIG. 1,3,6, over a wireless medium 112; see page 1, paragraph 7-10; see page 3, paragraph 36) before expiration of an interframe space (see FIG. 6, second MSDU is received immediately after the end of first MSDU without IFS 35 (see FIG. 2,4) before ending/concluding/expiration of IFS; see page 1, paragraph 9-10; page 3, paragraph 38-42).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide receiving before expiration of an interframe space, taught by Ho in the system of Stephens'055, so that it would improve efficiency of wireless channel utilization; see Ho page 2, paragraph 14.

Regarding Claim 17, Ho discloses the interframe space is a time period (see FIG. 2-4, IFS 35 a time period/interval between two frames; see page 1, paragraph 8-11) selected from a group of time periods consisting of including a short interframe space (see page 5, paragraph 53; short interface space, SIF).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the interframe space is a time period selected from a group of time periods consisting of including a short interframe space, taught by Ho in the system of Stephens'055, so that it would improve efficiency of wireless channel utilization; see Ho page 2, paragraph 14.

Regarding Claim 18, Ho discloses the header includes a physical device header (see FIG. 2-4, a header 26 is the header of the PHY device; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the header includes a physical device header, taught by Ho in the system of Stephens'055, so that it would improve efficiency of wireless channel utilization; see Ho page 2, paragraph 14.

Regarding claim 21, although the conflicting claims are not identical, they are not patentably distinct from each other because claim 21 of the instant application is the same scope of the claim 30 of Stephens'055 by adding the well-known elements and functions as set forth below.

Claim 21 of Instant application	**Claim 30 of Stephens'055**
Limitation 1 : An apparatus comprising: a medium access control device, which is operable to provide multiple data units destined for at least one receiver to a physical device; and	1. An apparatus comprising: a medium access control device, to provide multiple data units destined for a receive to physical device
Limitation 2 : the physical device, coupled to the medium access control device, which is operable to transmit a first protocol data unit over an air interface, wherein the first protocol data unit includes	2. the physical device, couple to the medium access control device, which is operable to transmit a header over an air interface (*not that a header is inside the protocol data unit*)
Limitation 3 : a first preamble, to enable a receiver to synchronize,	3. **NONE**
Limitation 4 : and which the physical device is to transmit at a first modulation rate;	4. transmit a header over an air interface, at a first modulation rate (*note that header and preamble are in the same unit, and they are transmitted at first modulation rate*)
Limitation 5 : a first header, following the first preamble, which the physical device is to transmit at the first modulation rate	5. transmit a header over an air interface, at a first modulation rate (*note that header unit always follows the*

Claim 21 of Instant application	Claim 30 of Stephens'055
	preamble)
Limitation 6 : a first service data unit, following the first header, which the physical device is to transmit at a second modulation rate;	**6.** transmit a consolidated payload over the air interface, at a second modulation rate different than the first modulation rate, wherein the consolidated payload is to include the multiple data units
Limitation 7 : transmit a second protocol data unit over the air interface without expiration of an interframe space between the first protocol data unit and the second protocol data unit	**7. NONE**

In view of the above, it is clear that the claim 21 of the instant application and the claim 30 of Stephens'055 merely recited the same invention except for a first preamble, to enable a receiver to synchronize and receiving a second protocol data unit over the air interface before expiration of an interface space (limitations 3 and 7) as recited in claim 21 of the instant application.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Ho. In particular, Ho discloses a first preamble (see FIG. 2-4, a preamble 24 of first MSDU) to enable a receiver to synchronize (see FIG. 1-2, 5, preamble time/synchronize the receiving station 12/102; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53);

transmit (see FIG. 1,3,6, first wireless station 10/110 transmitting; see page 1, paragraph 7-10; see page 3, paragraph 36) a second protocol data unit (see FIG. 6, second MSDU frame; see page 3, paragraph 38-41) over the air interface (see FIG. 1,3,6, over a wireless medium 112; see page 1, paragraph 7-10; see page 3, paragraph 36) before expiration of an interframe space between first protocol data unit and the second protocol data unit (see FIG. 6, second MSDU is

received immediately after the end of first MSDU without IFS 35 (see FIG. 2,4) before ending/concluding/expiration of IFS between first and second MSDUs; see page 1, paragraph 9-10; page 3, paragraph 38-42).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide transmit without expiration of an interframe space between the first protocol data unit and the second protocol data unit, taught by Ho in the system of Ho, so that it would improve efficiency of wireless channel utilization; see Ho page 2, paragraph 14.

Regarding claim 22, Ho further discloses said transmitting the second protocol data unit beings in approximately at a next symbol boundary (see FIG. 6, transmitting second MSDU (e.g. a combined system of second frame preamble n, header n and subbody n) is at next/subsequent MSDU boundary/interval/slot) after an end of transmitting the first protocol data unit (see FIG. 6, after the first MSDU (e.g. combined system of second frame preamble 1, header 1 and subbody 1)); see page 1, paragraph 9-10; page 3, paragraph 38-42).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to said transmitting the second protocol data unit beings in approximately at a next symbol boundary after an end of transmitting the first protocol data unit, as taught by Ho in the system of Stephens'055, for the same motivation set forth above in claim 21.

Regarding Claim 27, Ho discloses the interframe space is a time period (see FIG. 2-4, IFS 35 a time period/interval between two frames; see page 1, paragraph 8-11) selected from a group of time periods consisting of including a short interframe space (see page 5, paragraph 53; short interface space, SIF). Therefore, it would have been obvious to one having ordinary skill in

the art at the time the invention was made to provide the interframe space is a time period selected from a group of time periods consisting of including a short interframe space, as taught by Ho in the system of Stephens'055, for the same motivation set forth above in claim 21.

This is a provisional obviousness-type double patenting rejection.

8. **Claims 9 and 19** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 12 of copending U.S. Patent application No. 10/677,055 (hereinafter refers to as Stephens'055) in view of Ho (US 20030169769A1) and Oura (US 20050073960A1).

Regarding Claim 9, the combined system of Stephens'055 and Ho does not explicitly disclose the first modulation rate is in a range of approximately 6 to 12 megabits per second.

However, having the modulation rate is in a range of approximately 6 to 12 megabits per second is well know and established in the art as IEEE 802.11. In particular, Oura teaches the first modulation rate is in a range of approximately 6 to 12 megabits per second (see FIG. 2, modulation rate BPSK with 6 Mbps; see page 1, paragraph 5-6).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the first modulation rate is in a range of approximately 6 to 12 megabits per second, as taught by Oura in the combined system of Ho and Stephens'055, so that it would provide precisely deciding the transfer rate for optimization; see Oura page 1, paragraph 7,9; see page 2, paragraph 26-17.

Regarding Claim 19, the combined system of Stephens'055 and Ho does not explicitly disclose the first modulation rate is in a range of approximately 6 to 12 megabits per second.

However, having the modulation rate is in a range of approximately 6 to 12 megabits per second is well know and established in the art as IEEE 802.11. In particular, Oura teaches the first modulation rate is in a range of approximately 6 to 12 megabits per second (see FIG. 2, modulation rate BPSK with 6 Mbps; see page 1, paragraph 5-6).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the first modulation rate is in a range of approximately 6 to 12 megabits per second, as taught by Oura in the combined system of Ho and Stephens'055, so that it would provide precisely deciding the transfer rate for optimization; see Oura page 1, paragraph 7,9; see page 2, paragraph 26-17.

This is a provisional obviousness-type double patenting rejection.

9. **Claims 10, 12, 15, 20, 23 and 26** are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 12 and 30 of copending U.S. Patent application No. 10/677,055 (hereinafter refers to as Stephens'055) in view of Ho (US 20030169769A1) and Boer (U.S. 5,706,428).

Regarding Claim 10, the combined system of Stephens'055 and Ho does not explicitly disclose the second modulation rate is in a range of approximately 6 to 240 megabits per second.

However, Boer teaches the second modulation rate is in a range of approximately 6 to 240 megabits per second (see col. 3, line 56-65; the modulation rate for data is 8 Mbps).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the second modulation rate is in a range of approximately 6 to 240 megabits per second, as taught by Boer in the combined system of Ho and Stephens'055, so

that it would enable communication between station operating at different data rates; see Boer col. 1, line 28-47.

Regarding claim 12, Stephens'055 discloses transmitting preamble at a first transmission rate, transmitting a header at the first modulation rate, and transmitting a service data unit at a second modulation rate as set forth above in claim 11. Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second preamble (see FIG. 2,4, preamble 24 of second MSDU, note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53),

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Neither Stephens'055 nor Ho explicitly discloses a third modulation rate.

However Boer discloses the second protocol data unit (note that more than one data message are transmitted and received; see col. 2, line 5-25) includes:

a second preamble (see FIG. 4, preamble 216 of next/subsequent message), which is received at the first modulation rate (see col. 3, line 55-60; preamble is received at 1 Mpbs using DBPSK modulation);

a second header (see FIG. 4, header 21 of next/subsequent message), following the second preamble (see FIG. 4, header 218 follows preamble 216 of next/subsequent message), which is received at the third modulation rate (see col. 3, line 55-60; header is received at 1 Mbps using DBPSK modulation).

a second service data unit (see FIG. 4, Data 214 of next/subsequent message), following the first header (see FIG. 4, data 214 follows header 218 of next/subsequent message), which is received at a third modulation rate (see col. 3, line 55-65; abstract; data is received at 2 Mbps rates using PPM/DQPSK).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the third modulation rate, as taught by Boer in the combined system of Stephens'055 and Ho, so that it would enable communication between station operating at different data rates; see Boer col. 1, line 28-47.

Regarding claim 15, Stephens'055 discloses transmitting a header at the first modulation rate, and transmitting a service data unit at a second modulation rate as set forth above in claim 11. Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that

FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Neither Stephens'055 nor Ho explicitly discloses a third modulation rate.

However Boer discloses the second protocol data unit (note that more than one data message are transmitted and received; see col. 2, line 5-25) includes:

a second header (see FIG. 4, header 21 of next/subsequent message), following the second preamble (see FIG. 4, header 218 follows preamble 216 of next/subsequent message), which is received at the third modulation rate (see col. 3, line 55-60; header is received at 1 Mbps using DBPSK modulation).

a second service data unit (see FIG. 4, Data 214 of next/subsequent message), following the first header (see FIG. 4, data 214 follows header 218 of next/subsequent message), which is received at a third modulation rate (see col. 3, line 55-65; abstract; data is received at 2 Mbps rates using PPM/DQPSK).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the third modulation rate, as taught by Boer in the combined

system of Stephens'055 and Ho, so that it would enable communication between station operating at different data rates; see Boer col. 1, line 28-47.

Regarding Claim 20, the combined system of Stephens'055 and Ho does not explicitly disclose the second modulation rate is in a range of approximately 6 to 240 megabits per second.

However, Boer teaches the second modulation rate is in a range of approximately 6 to 240 megabits per second (see col. 3, line 56-65; the modulation rate for data is 8 Mbps).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the second modulation rate is in a range of approximately 6 to 240 megabits per second, as taught by Boer in the combined system of Ho and Stephens'055, so that it would enable communication between station operating at different data rates; see Boer col. 1, line 28-47.

Regarding claim 23, Stephens'055 discloses transmitting preamble at a first transmission rate, transmitting a header at the first modulation rate, and transmitting a service data unit at a second modulation rate as set forth above in claim 21. Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second preamble (see FIG. 2,4, preamble 24 of second MSDU, note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53),

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the

aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Neither Stephens'055 nor Ho explicitly discloses a third modulation rate.

However Boer discloses the second protocol data unit (note that more than one data message are transmitted and received; see col. 2, line 5-25) includes:

a second preamble (see FIG. 4, preamble 216 of next/subsequent message), which is received at the first modulation rate (see col. 3, line 55-60; preamble is received at 1 Mpbs using DBPSK modulation);

a second header (see FIG. 4, header 21 of next/subsequent message), following the second preamble (see FIG. 4, header 218 follows preamble 216 of next/subsequent message), which is received at the third modulation rate (see col. 3, line 55-60; header is received at 1 Mbps using DBPSK modulation).

a second service data unit (see FIG. 4, Data 214 of next/subsequent message), following the first header (see FIG. 4, data 214 follows header 218 of next/subsequent message), which is received at a third modulation rate (see col. 3, line 55-65; abstract; data is received at 2 Mbps rates using PPM/DQPSK).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the third modulation rate, as taught by Boer in the combined system of Stephens'055 and Ho, so that it would enable communication between station operating at different data rates; see Boer col. 1, line 28-47.

Regarding claim 26, Stephens'055 discloses transmitting a header at the first modulation rate, and transmitting a service data unit at a second modulation rate as set forth above in claim 21. Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Neither Stephens'055 nor Ho explicitly discloses a third modulation rate.

However Boer discloses the second protocol data unit (note that more than one data message are transmitted and received; see col. 2, line 5-25) includes:

a second header (see FIG. 4, header 21 of next/subsequent message), following the second preamble (see FIG. 4, header 218 follows preamble 216 of next/subsequent message),

which is received at the third modulation rate (see col. 3, line 55-60; header is received at 1 Mbps using DBPSK modulation).

a second service data unit (see FIG. 4, Data 214 of next/subsequent message), following the first header (see FIG. 4, data 214 follows header 218 of next/subsequent message), which is received at a third modulation rate (see col. 3, line 55-65; abstract; data is received at 2 Mbps rates using PPM/DQPSK).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the third modulation rate, as taught by Boer in the combined system of Stephens'055 and Ho, so that it would enable communication between station operating at different data rates; see Boer col. 1, line 28-47.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-3, 6-8, 30-31,34,36 and 37 are rejected under 35 U.S.C. 102(e) as being anticipated by Ho (US 20030169769A1).

Regarding claim 1, Ho discloses a method (see FIG. 5, a pair of wireless LAN device 100 and 102 performing processes/method; see page 3, paragraph 36) comprising:

transmitting (see FIG. 1,3,6, first wireless station 10/110 transmitting; see page 1, paragraph 7-10; see page 3, paragraph 36) a first protocol data unit (see FIG. 6, first MAC protocol data unit (MSDU) frame; see page 3, paragraph 38-41) over an air interface (see FIG. 1,3,6, over a wireless medium 112; see page 1, paragraph 7-10; see page 3, paragraph 36), wherein the first protocol data unit includes

a first preamble (see FIG. 2-4, a preamble 24 of first MSDU) to enable a receiver to synchronize (see FIG. 1-2, 5, preamble time/synchronize the receiving station 12/102; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53);

a first header (see FIG. 2-4, a header 26 of first MSDU), following the first preamble (see FIG. 2-4, a header 26 follows/next to the preamble 24; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a first service data unit (see FIG. 2-4, data 28 of first MSDU), following the first header (see FIG. 2-4, a data 28 follows/next to the header 26; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53); and

transmitting (see FIG. 1,3,6, first wireless station 10/110 transmitting; see page 1, paragraph 7-10; see page 3, paragraph 36) a second protocol data unit (see FIG. 6, second MSDU frame; see page 3, paragraph 38-41) over the air interface (see FIG. 1,3,6, over a wireless medium 112; see page 1, paragraph 7-10; see page 3, paragraph 36) without an interframe space between the first protocol data unit and the second protocol data unit (see FIG. 6, multiple (e.g. first and second) MSDUs are aggregated within a single aggregation frame without IFS 35 (see FIG. 2,4); see page 1, paragraph 9-10; page 3, paragraph 38-42).

Regarding claim 2, Ho discloses said transmitting the second protocol data unit beings in approximately at a next symbol boundary (see FIG. 6, transmitting second MSDU (e.g. a combined system of second frame preamble n, header n and subbody n) is at next/subsequent MSDU boundary/interval/slot) after an end of transmitting the first protocol data unit (see FIG. 6, after the first MSDU (e.g. combined system of second frame preamble 1, header 1 and subbody 1)); see page 1, paragraph 9-10; page 3, paragraph 38-42).

Regarding claim 3, Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second preamble (see FIG. 2,4, preamble 24 of second MSDU, note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53),

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Regarding claim 6, Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Regarding Claim 7, Ho discloses the interframe space is a time period (see FIG. 2-4, IFS 35 a time period/interval between two frames; see page 1, paragraph 8-11) selected from a group of time periods consisting of including a short interframe space (see page 5, paragraph 53; short interface space, SIF).

Regarding Claim 8, Ho discloses the header includes a physical device header (see FIG. 2-4, a header 26 is the header of the PHY device; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53).

Regarding claim 30, Ho discloses an apparatus (see FIG. 5, Station 100/102) comprising:

a medium access control device (see FIG. 5, MAC 106), which is operable to receive multiple data units from a physical device (see FIG. 5, MAC 106 receives MAC protocol data unit (MSDU) frames from PHY 108; see page 3, paragraph 36-38); and

the physical device (see FIG. 5, PHY 108), coupled to the medium access control device (see FIG. 5, PHY 108 couples/connects to MAC 106), the physical device to receive a first protocol data unit (see FIG. 6, receiving first MAC protocol data unit (MSDU) frame at the station 100/102; see page 3, paragraph 38-41) over an air interface (see FIG. 1,3,6, over a wireless medium 112; see page 1, paragraph 7-10; see page 3, paragraph 36), wherein the first protocol data unit includes

a first preamble (see FIG. 2-4, a preamble 24 of first MSDU) to enable a receiver to synchronize (see FIG. 1-2, 5, preamble time/synchronize the receiving station 12/102; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53);

a first header (see FIG. 2-4, a header 26 of first MSDU), following the first preamble (see FIG. 2-4, a header 26 follows/next to the preamble 24; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a first service data unit (see FIG. 2-4, data 28 of first MSDU), following the first header (see FIG. 2-4, a data 28 follows/next to the header 26; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

receive a second protocol data unit (see FIG. 6, station 100/102 receiving second MSDU frame; see page 3, paragraph 38-41) over the air interface (see FIG. 1,3,6, over a wireless network 90; see page 1, paragraph 7-10; see page 3, paragraph 36), wherein the second protocol data unit is to be in approximately at a next symbol boundary (see FIG. 6, second MSDU (e.g. a

combined system of second frame preamble n, header n and subbody n) is at next/subsequent MSDU boundary/interval/slot) after an end of transmitting the first protocol data unit (see FIG. 6, after the first MSDU (e.g. combined system of second frame preamble 1, header 1 and subbody 1)) before expiration of an interframe space (see FIG. 6, second MSDU is received immediately after the end of first MSDU without IFS 35 (see FIG. 2,4) before ending/concluding/expiration of IFS; see page 1, paragraph 9-10; page 3, paragraph 38-42).

Regarding claim 31, Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second preamble (see FIG. 2,4, preamble 24 of second MSDU, note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53),

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Regarding claim 34, Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Regarding Claim 36, Ho discloses the interframe space is a time period (see FIG. 2-4, IFS 35 a time period/interval between two frames; see page 1, paragraph 8-11) selected from a group of time periods consisting of including a short interframe space (see page 5, paragraph 53; short interface space, SIF).

Regarding Claim 37, Ho discloses the header includes a physical device header (see FIG. 2-4, a header 26 is the header of the PHY device; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ho in view of Oura (US 20050073960A1).

Regarding Claim 9, Ho does not explicitly disclose the first modulation rate is in a range of approximately 6 to 12 megabits per second.

However, having the modulation rate is in a range of approximately 6 to 12 megabits per second is well know and established in the art as IEEE 802.11. In particular, Oura teaches the first modulation rate is in a range of approximately 6 to 12 megabits per second (see FIG. 2, modulation rate BPSK with 6 Mbps; see page 1, paragraph 5-6).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the first modulation rate is in a range of approximately 6 to 12 megabits per second, as taught by Oura in the system of Ho, so that it would provide precisely deciding the transfer rate for optimization; see Oura page 1, paragraph 7,9; see page 2, paragraph 26-17.

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ho in view of Boer (U.S. 5,706,428).

Regarding Claim 10, Ho does not explicitly disclose the second modulation rate is in a range of approximately 6 to 240 megabits per second.

However, Boer teaches the second modulation rate is in a range of approximately 6 to 240 megabits per second (see col. 3, line 56-65; the modulation rate for data is 8 Mbps).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the second modulation rate is in a range of approximately 6 to 240 megabits per second, as taught by Boer in the system of Ho, so that it would enable communication between station operating at different data rates; see Boer col. 1, line 28-47.

13. Claims 11, 12, 15, 17,18,20-23,26,27,41,46,47 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boer (US 5,706,428) in view of Ho.

Regarding Claim 11, Boer discloses a method (see FIG. 2-3, a wireless LAN station 18/22 processing the steps/method) comprising:

receiving a first protocol data unit (see FIG. 4, data message) over an air interface (see FIG. 1-3, RF receiver 52/152 receiving data message over the wireless communication channel; see col. 2, line 5-20; see col. 3, line 1-40), wherein the first protocol data unit includes

a first preamble (see FIG. 4, preamble 216), to enable a receiver (see FIG. 1-3, RF receiver 52/152) to synchronize (see col. 3, paragraph 41-65; see col. 6, line 45 to col. 7, line 7; preamble times/synchronize the receiver 52/152 since preamble contains SYNC field 202), and which is received at a first modulation rate (see col. 3, line 55-60; preamble is received at 1 Mpbs using DBPSK modulation);

a first header (see FIG. 4, header 21), following the first preamble (see FIG. 4, header 218 follows preamble 216), which is received at the first modulation rate (see col. 3, line 55-60; header is received at 1 Mpbs using DBPSK modulation); and

the first service data unit (see FIG. 4, Data 214), following the first header (see FIG. 4, data 214 follows header 218), which is received at a second modulation rate (see col. 3, line 55-65; abstract; data is received at 8 Mbps rates using PPM/DQPSK);

receiving a second protocol data unit over the air interface (see FIG. 1-3, RF receiver 52/152 receiving subsequent/next/second data message over the wireless communication channel ; note that more than one data message are transmitted and received; see col. 2, line 5-25; see col. 3, line 1-40).

Boer does not explicitly disclose before expiration of an interframe space.

However, Ho teaches receiving (see FIG. 1,3,6, first wireless station 10/110 receiving; see page 1, paragraph 7-10; see page 3, paragraph 36) a first protocol data unit (see FIG. 6, first MAC protocol data unit (MSDU) frame; see page 3, paragraph 38-41) over an air interface (see FIG. 1,3,6, over a wireless medium 112; see page 1, paragraph 7-10; see page 3, paragraph 36),

receiving (see FIG. 1,3,6, first wireless station 10/110 receiving; see page 1, paragraph 7-10; see page 3, paragraph 36) a second protocol data unit (see FIG. 6, second MSDU frame; see page 3, paragraph 38-41) over the air interface (see FIG. 1,3,6, over a wireless medium 112; see page 1, paragraph 7-10; see page 3, paragraph 36) before expiration of an interframe space (see FIG. 6, second MSDU is received immediately after the end of first MSDU without IFS 35 (see FIG. 2,4) before ending/concluding/expiration of IFS; see page 1, paragraph 9-10; page 3, paragraph 38-42).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide receiving before expiration of an interframe space, taught by Ho in the system of Boer, so that it would improve efficiency of wireless channel utilization; see Ho page 2, paragraph 14.

Regarding claim 12, Boer discloses the second protocol data unit (note that more than one data message are transmitted and received; see col. 2, line 5-25) includes:

a second preamble (see FIG. 4, preamble 216 of next/subsequent message), which is received at the first modulation rate (see col. 3, line 55-60; preamble is received at 1 Mpbs using DBPSK modulation);

a second header (see FIG. 4, header 21 of next/subsequent message), following the second preamble (see FIG. 4, header 218 follows preamble 216 of next/subsequent message), which is received at the third modulation rate (see col. 3, line 55-60; header is received at 1 Mbps using DBPSK modulation).

a second service data unit (see FIG. 4, Data 214 of next/subsequent message), following the first header (see FIG. 4, data 214 follows header 218 of next/subsequent message), which is received at a third modulation rate (see col. 3, line 55-65; abstract; data is received at 2 Mbps rates using PPM/DQPSK).

Also, Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second preamble (see FIG. 2,4, preamble 24 of second MSDU, note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53),

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Regarding claim 15, Boer discloses the second protocol data unit (note that more than one data message are transmitted and received; see col. 2, line 5-25) includes:

a second header (see FIG. 4, header 21 of next/subsequent message), following the second preamble (see FIG. 4, header 218 follows preamble 216 of next/subsequent message), which is received at the third modulation rate (see col. 3, line 55-60; header is received at 1 Mbps using DBPSK modulation).

a second service data unit (see FIG. 4, Data 214 of next/subsequent message), following the first header (see FIG. 4, data 214 follows header 218 of next/subsequent message), which is received at a third modulation rate (see col. 3, line 55-65; abstract; data is received at 2 Mbps rates using PPM/DQPSK).

Also, Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Regarding Claim 17, Boer discloses interframe space is a time period selected from a group of time periods consisting of including a short interframe space (see col. 4, line 30-35; interframe spacing time is a short interframe spacing time). Ho discloses the interframe space is a time period (see FIG. 2-4, IFS 35 a time period/interval between two frames; see page 1, paragraph 8-11) selected from a group of time periods consisting of including a short interframe space (see page 5, paragraph 53; short interface space, SIF).

Regarding Claim 18, Boer discloses the header includes a physical device header (see col. 3, line 40-55; header 218 is the header for a combined physical device header). Ho discloses the header includes a physical device header (see FIG. 2-4, a header 26 is the header of the PHY device; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53).

Regarding Claim 20, Boer teaches the second modulation rate is in a range of approximately 6 to 240 megabits per second (see col. 3, line 56-65; the modulation rate for data is 8 Mbps).

Regarding Claim 21, Boer discloses an apparatus (see FIG. 2-3, a wireless LAN station 18/22) comprising:

a medium access control device (see FIG. 2-3, MAC control 30/130), which is operable to provide multiple data units (see FIG. 2-3, transmitting data messages) destined for at least one receiver (see FIG. 2-3, for RF receiver 52/152) to a physical device (see FIG. 2-3, to a combined system of physical unit RF transmitter 50/150, spreader 48/148 and encoder 48/146 for transmission); see col. 2, line 63 to col. 3, line 40); and

the physical device, coupled to the medium access control device (see FIG. 2-3, a combined system of physical device is connected with MAC 30/130), which is operable to transmit a first protocol data unit (see FIG. 4, transmitting data message) over an air interface (see FIG. 1-3, RF receiver 52/152 receiving data message over the wireless communication channel; see col. 2, line 5-20; see col. 3, line 1-40), wherein the first protocol data unit includes

a first preamble (see FIG. 4, preamble 216), to enable a receiver (see FIG. 1-3, RF receiver 52/152) to synchronize (see col. 3, paragraph 41-65; see col. 6, line 45 to col. 7, line 7; preamble times/synchronize the receiver 52/152 since preamble contains SYNC field 202), and which is received at a first modulation rate (see col. 3, line 55-60; preamble is received at 1 Mpbs using DBPSK modulation);

a first header (see FIG. 4, header 21), following the first preamble (see FIG. 4, header 218 follows preamble 216), which the physical device is to transmit at the first modulation rate

(see col. 3, line 55-60; header is transmitted by the combined physical unit at 1 Mpbs using DBPSK modulation); and

the first service data unit (see FIG. 4, Data 214), following the first header (see FIG. 4, data 214 follows header 218), which the physical device is to transmit at a second modulation rate (see col. 3, line 55-65; abstract; data is transmitted by the combined physical unit at 1/2/5/8 Mbps rates using PPM/DQPSK);

transmit a second protocol data unit over the air interface (see FIG. 1-3, RF transmitter 50/150 transmits subsequent/next/second data message over the wireless communication channel ; note more than one data message are transmitted and received; see col. 2, line 5-25; see col. 3, line 1-40).

Boer does not explicitly disclose without expiration of an interframe space between the first protocol data unit and the second protocol data unit.

However, Ho teaches a medium access control device (see FIG. 5, MAC 106), which is operable to provide multiple data units from a physical device (see FIG. 5, MAC 106 transmits MAC protocol data unit (MSDU) frames to PHY 108; see page 3, paragraph 36-38); and

the physical device (see FIG. 5, PHY 108), coupled to the medium access control device (see FIG. 5, PHY 108 couples/connects to MAC 106), which is operable to transmit a first protocol data unit (see FIG. 6, transmits first MAC protocol data unit (MSDU) frame at the station 100/102; see page 3, paragraph 38-41) over an air interface (see FIG. 1,3,6, over a wireless medium 112; see page 1, paragraph 7-10; see page 3, paragraph 36);

transmit (see FIG. 1,3,6, first wireless station 10/110 transmitting; see page 1, paragraph 7-10; see page 3, paragraph 36) a second protocol data unit (see FIG. 6, second MSDU frame;

see page 3, paragraph 38-41) over the air interface (see FIG. 1,3,6, over a wireless medium 112; see page 1, paragraph 7-10; see page 3, paragraph 36) before expiration of an interframe space between first protocol data unit and the second protocol data unit (see FIG. 6, second MSDU is received immediately after the end of first MSDU without IFS 35 (see FIG. 2,4) before ending/concluding/expiration of IFS between first and second MSDUs; see page 1, paragraph 9-10; page 3, paragraph 38-42).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide transmit without expiration of an interframe space between the first protocol data unit and the second protocol data unit, taught by Ho in the system of Ho, so that it would improve efficiency of wireless channel utilization; see Ho page 2, paragraph 14.

Regarding claim 22, Boer discloses the physical device (see FIG. 2-3, to a combined system of physical unit RF transmitter 50/150, spreader 48/148 and encoder 48/146 for transmission); see col. 2, line 63 to col. 3, line 40) is further operable to transmit the second protocol unit (see FIG. 1-3, the combined physical unit transmits subsequent/next/second data message over the wireless communication channel; note more than one data message are transmitted and received; see col. 2, line 5-25; see col. 3, line 1-40).

Boer does not explicitly disclose beings in approximately at a next symbol boundary after an end of transmitting the first protocol data unit.

Ho discloses the physical unit is further operable to transmit the second protocol data unit beings in approximately at a next symbol boundary (see FIG. 6, PHY transmitting second MSDU (e.g. a combined system of second frame preamble n, header n and subbody n) is at next/subsequent MSDU boundary/interval/slot) after an end of transmitting the first protocol data

unit (see FIG. 6, after the first MSDU (e.g. combined system of second frame preamble 1, header 1 and subbody 1)); see page 1, paragraph 9-10; page 3, paragraph 38-42).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide approximately at a next symbol boundary after an end of transmitting the first protocol data unit, taught by Ho in the system of Boer, so that it would improve efficiency of wireless channel utilization; see Ho page 2, paragraph 14.

Regarding claim 23, Boer discloses the second protocol data unit (note that more than one data message are transmitted and received; see col. 2, line 5-25) includes:

a second preamble (see FIG. 4, preamble 216 of next/subsequent message), which the physical device is to transmit at the first modulation rate (see col. 3, line 55-60; preamble is transmits by the combined physical unit at 1 Mpbs using DBPSK modulation);

a second header (see FIG. 4, header 21 of next/subsequent message), following the second preamble (see FIG. 4, header 218 follows preamble 216 of next/subsequent message), wherein the physical device is to transmit at the third modulation rate (see col. 3, line 55-60; header is transmitted by the a combined physical unit at 1 Mbps using DBPSK modulation).

a second service data unit (see FIG. 4, Data 214 of next/subsequent message), following the first header (see FIG. 4, data 214 follows header 218 of next/subsequent message), which the physical device is to transmit at a third modulation rate (see col. 3, line 55-65; abstract; data is transmitted by a combined system of physical unit at 2 Mbps rates using PPM/DQPSK).

Also, Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second preamble (see FIG. 2,4, preamble 24 of second MSDU, note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame

including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53),

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Regarding claim 26, Boer discloses the second protocol data unit (note that more than one data message are transmitted and received; see col. 2, line 5-25) includes:

a second header (see FIG. 4, header 21 of next/subsequent message), following the second preamble (see FIG. 4, header 218 follows preamble 216 of next/subsequent message), wherein the physical device is to transmit at the third modulation rate (see col. 3, line 55-60; header is transmitted by the a combined physical unit at 1 Mbps using DBPSK modulation).

a second service data unit (see FIG. 4, Data 214 of next/subsequent message), following the first header (see FIG. 4, data 214 follows header 218 of next/subsequent message), which the physical device is to transmit at a third modulation rate (see col. 3, line 55-65; abstract; data is transmitted by a combined system of physical unit at 2 Mbps rates using PPM/DQPSK).

Also, Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Regarding Claim 27, Boer discloses interframe space is a time period selected from a group of time periods consisting of including a short interframe space (see col. 4, line 30-35; interframe spacing time is a short interframe spacing time). Ho discloses the interframe space is a time period (see FIG. 2-4, IFS 35 a time period/interval between two frames; see page 1, paragraph 8-11) selected from a group of time periods consisting of including a short interframe space (see page 5, paragraph 53; short interface space, SIF).

Regarding claim 41, Boer discloses said receiving the second protocol unit (see FIG. 1-3, the combined physical unit receives subsequent/next/second data message over the wireless communication channel; note more than one data message are transmitted and received; see col. 2, line 5-25; see col. 3, line 1-40).

Boer does not explicitly disclose beings in approximately at a next symbol boundary after an end of transmitting the first protocol data unit.

Ho discloses said receiving the second protocol data unit is to being in approximately at a next symbol boundary (see FIG. 6, receiving second MSDU (e.g. a combined system of second frame preamble n, header n and subbody n) is at next/subsequent MSDU boundary/interval/slot) after an end of said receiving the first protocol data unit (see FIG. 6, after the first MSDU (e.g. combined system of second frame preamble 1, header 1 and subbody 1)); see page 1, paragraph 9-10; page 3, paragraph 38-42).

Regarding Claim 46, Boer discloses a computer-readable medium (see FIG. 2-3, management state machine stores the data in the table, M-MST 34)) having program instructions stored thereon to perform a method (see col. 1, line 10-15; see col. 4, line 62-67; see col. 5, line 10-15; see col. 6, line 10-15, 45-50; see col. 7, line 10-16; storing the data to excluded in method flow), which when executed within a wireless local area network device (see FIG. 2-3, a wireless LAN station 18/22), result in:

receiving a first protocol data unit (see FIG. 4, data message) over an air interface (see FIG. 1-3, RF receiver 52/152 receiving data message over the wireless communication channel; see col. 2, line 5-20; see col. 3, line 1-40), wherein the first protocol data unit includes

a first preamble (see FIG. 4, preamble 216), to enable a receiver (see FIG. 1-3, RF receiver 52/152) to synchronize (see col. 3, paragraph 41-65; see col. 6, line 45 to col. 7, line 7; preamble times/synchronize the receiver 52/152 since preamble contains SYNC field 202), and which is received at a first modulation rate (see col. 3, line 55-60; preamble is received at 1 Mpbs using DBPSK modulation);

a first header (see FIG. 4, header 21), following the first preamble (see FIG. 4, header 218 follows preamble 216), which is received at the first modulation rate (see col. 3, line 55-60; header is received at 1 Mpbs using DBPSK modulation); and

the first service data unit (see FIG. 4, Data 214), following the first header (see FIG. 4, data 214 follows header 218), which is received at a second modulation rate (see col. 3, line 55-65; abstract; data is received at 1/2/5/8 Mbps rates using PPM/DQPSK);

receiving a second protocol data unit over the air interface (see FIG. 1-3, RF receiver 52/152 receiving subsequent/next/second data message over the wireless communication channel; note more than one data message are transmitted and received; see col. 2, line 5-25; see col. 3, line 1-40).

Boer does not explicitly disclose before expiration of an interframe between the first protocol data unit and the second protocol data unit.

However, Ho teaches receiving (see FIG. 1,3,6, first wireless station 10/110 receiving; see page 1, paragraph 7-10; see page 3, paragraph 36) a first protocol data unit (see FIG. 6, first MAC protocol data unit (MSDU) frame; see page 3, paragraph 38-41) over an air interface (see FIG. 1,3,6, over a wireless medium 112; see page 1, paragraph 7-10; see page 3, paragraph 36),

receiving (see FIG. 1,3,6, first wireless station 10/110 receiving; see page 1, paragraph 7-10; see page 3, paragraph 36) a second protocol data unit (see FIG. 6, second MSDU frame; see page 3, paragraph 38-41) over the air interface (see FIG. 1,3,6, over a wireless medium 112; see page 1, paragraph 7-10; see page 3, paragraph 36) before expiration of an interframe space between the first protocol data unit and the second protocol data unit (see FIG. 6, second MSDU is received immediately after the end of first MSDU without IFS 35 (see FIG. 2,4) before

ending/concluding/expiration of IFS between first and second MSDUs; see page 1, paragraph 9-10; page 3, paragraph 38-42).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide receiving before expiration of an interframe space between the first protocol data unit and the second protocol data unit, taught by Ho in the system of Boer, so that it would improve efficiency of wireless channel utilization; see Ho page 2, paragraph 14.

Regarding claim 47, Boer discloses the second protocol data unit (note that more than one data message are transmitted and received; see col. 2, line 5-25) includes:

a second preamble (see FIG. 4, preamble 216 of next/subsequent message), which is received at the first modulation rate (see col. 3, line 55-60; preamble is received at 1 Mpbs using DBPSK modulation);

a second header (see FIG. 4, header 21 of next/subsequent message), following the second preamble (see FIG. 4, header 218 follows preamble 216 of next/subsequent message), which is received at the third modulation rate (see col. 3, line 55-60; header is received at 1 Mbps using DBPSK modulation).

a second service data unit (see FIG. 4, Data 214 of next/subsequent message), following the first header (see FIG. 4, data 214 follows header 218 of next/subsequent message), which is received at a third modulation rate (see col. 3, line 55-65; abstract; data is received at 2 Mbps rates using PPM/DQPSK).

Also, Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second preamble (see FIG. 2,4, preamble 24 of second MSDU, note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame

including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53),

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Regarding claim 50, Boer discloses the second protocol data unit (note that more than one data message are transmitted and received; see col. 2, line 5-25) includes:

a second header (see FIG. 4, header 21 of next/subsequent message), following the second preamble (see FIG. 4, header 218 follows preamble 216 of next/subsequent message), which is received at the third modulation rate (see col. 3, line 55-60; header is received at 1 Mbps using DBPSK modulation).

a second service data unit (see FIG. 4, Data 214 of next/subsequent message), following the first header (see FIG. 4, data 214 follows header 218 of next/subsequent message), which is received at a third modulation rate (see col. 3, line 55-65; abstract; data is received at 2 Mbps rates using PPM/DQPSK).

Also, Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

14. Claim 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Ho in view of Oura (US 20050073960A1).

Regarding Claim 19, Boer discloses the first modulation rate is 1 megabits per second (see col. 3, line 55-60).

Neither Boer nor Ho explicitly discloses a range of approximately 6 to 12 megabits per second.

However, having the modulation rate is in a range of approximately 6 to 12 megabits per second is well know and established in the art as IEEE 802.11. In particular, Oura teaches the first modulation rate is in a range of approximately 6 to 12 megabits per second (see FIG. 2, modulation rate BPSK with 6 Mbps; see page 1, paragraph 5-6).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the first modulation rate is in a range of approximately 6 to 12 megabits per second, as taught by Oura in the combined system of Boer and Ho, so that it would provide precisely deciding the transfer rate for optimization; see Oura page 1, paragraph 7;9; see page 2, paragraph 26-17.

15. Claims 40, 42 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ho in view of Lu (US006694134B1).

Regarding claim 40, Ho discloses perform a method, which when executed within a wireless local area network device (see FIG. 5, a pair of wireless device 100 and 102 (e.g. access points 140 (see FIG. 7), or station 142 (see FIG. 7) such as PDA, computer) performing processes/method; see page 3, paragraph 36), result in:

transmitting (see FIG. 1,3,6, first wireless station 10/110 transmitting; see page 1, paragraph 7-10; see page 3, paragraph 36) a first protocol data unit (see FIG. 6, first MAC protocol data unit (MSDU) frame; see page 3, paragraph 38-41) over an air interface (see FIG. 1,3,6, over a wireless medium 112; see page 1, paragraph 7-10; see page 3, paragraph 36), wherein the first protocol data unit includes

a first preamble (see FIG. 2-4, a preamble 24 of first MSDU) to enable a receiver to synchronize (see FIG. 1-2, 5, preamble time/synchronize the receiving station 12/102; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53);

a first header (see FIG. 2-4, a header 26 of first MSDU), following the first preamble (see FIG. 2-4, a header 26 follows/next to the preamble 24; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a first service data unit (see FIG. 2-4, data 28 of first MSDU), following the first header (see FIG. 2-4, a data 28 follows/next to the header 26; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

transmitting (see FIG. 1,3,6, first wireless station 10/110 transmitting; see page 1, paragraph 7-10; see page 3, paragraph 36) a second protocol data unit (see FIG. 6, second MSDU frame; see page 3, paragraph 38-41) over the air interface (see FIG. 1,3,6, over a wireless medium 112; see page 1, paragraph 7-10; see page 3, paragraph 36), the second protocol data unit to begin approximately at a next symbol boundary after an end of the first protocol data unit (see FIG. 6, second MSDU (e.g. a combined system of second frame preamble n, header n and subbody n) is at next/subsequent MSDU boundary/interval/slot) after an end of transmitting the first protocol data unit (see FIG. 6, after the first MSDU (e.g. combined system of second frame preamble 1, header 1 and subbody 1)); see page 1, paragraph 9-10; page 3, paragraph 38-42).

Ho does not explicitly disclose a computer-readable medium having program instructions stored thereon to.

However, a wireless LAN device comprising a computer-readable medium having program instructions stored thereon to so well known in the art. In particular, Lu teaches a wireless LAN node comprising a computer-readable medium having program instructions (see col. 2, line 40-65; col. 6, line 35-52; see col. 7, line 50-60; wireless LAN device having a computer readable medium storing the computer programs).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a computer-readable medium having program instructions stored thereon to, as taught by Lu the system of Ho, so that it would perform method steps; see col. 2, line 56-65. Also, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide memory or storage medium taught by Lu since memory or storage medium is required in order to execute or perform the method(s) of the system of Ho.

Regarding claim 42, Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second preamble (see FIG. 2,4, preamble 24 of second MSDU, note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53),

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Regarding claim 45, Ho discloses the second protocol data unit includes (see FIG. 6, second MSDU):

a second header (see FIG. 2-4, a header 26 of second MSDU), following the second preamble (see FIG. 2-4, a second header 26 follows/next to the second preamble 24; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; page 3, paragraph 38; page 5, paragraph 53); and

a second service data unit (see FIG. 2-4, data 28 of second MSDU), following the second header following the first header (see FIG. 2-4, a data 28 follows/next to the second header 26; note that FIG. 2-4 show a typical MSDU format and thus it applies to each and every MSDU in the aggregated frame including a second MSDU; see page 1, paragraph 8-10; see page 3, paragraph 38; page 5, paragraph 53).

Allowable Subject Matter

16. **Claim 35** is objected to as set forth in paragraph 3 and as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. **Claim 16 and 51** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ian N. Moore
Examiner
Art Unit 2616

7-11-07